

Chollas Creek Runoff Reduction & Groundwater Recharge

**Deena Raver
County of San Diego
Department of General Services**

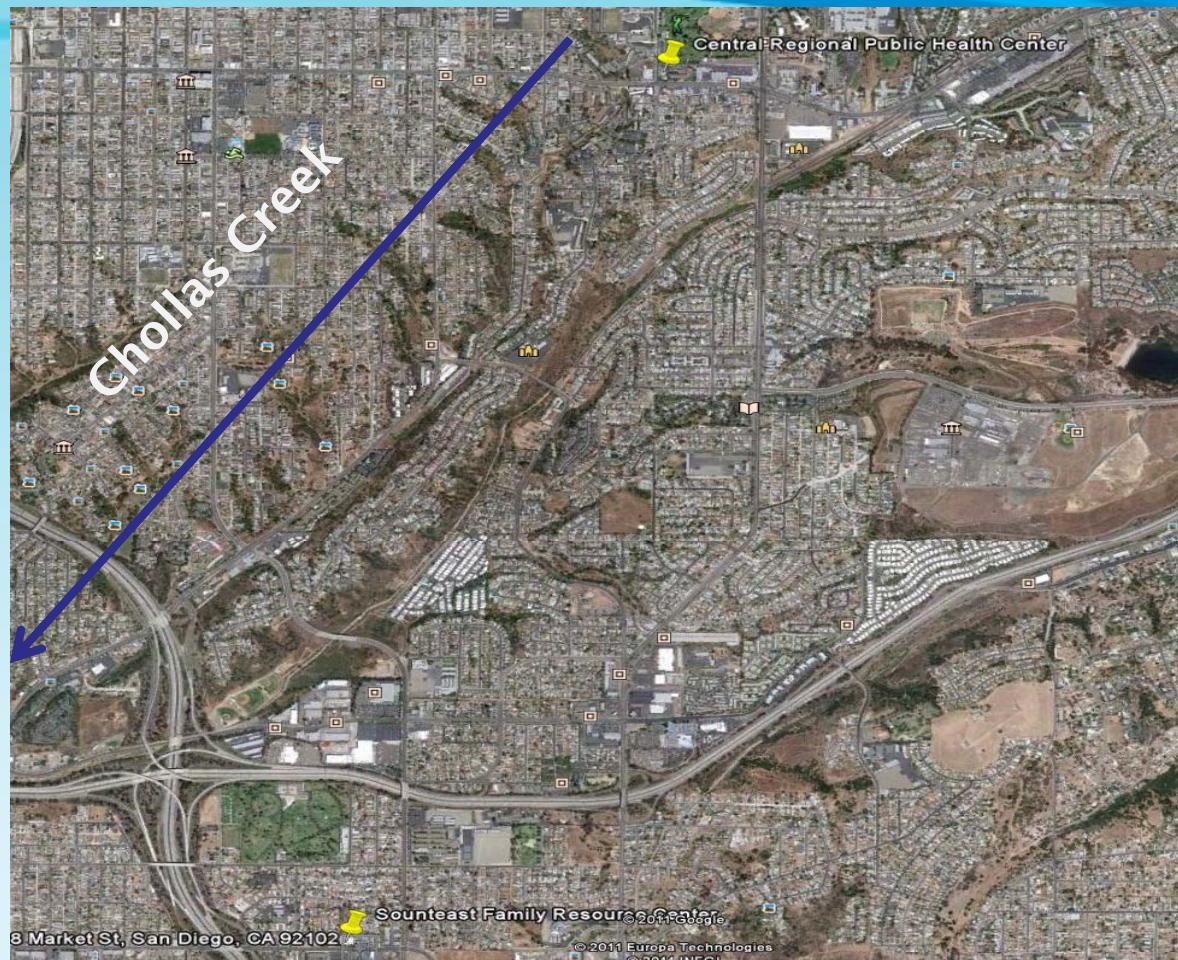
&

**Richard Watson
Richard Watson & Associates, Inc. (RWA)
Urban & Regional Planning**

**Chollas Creek Metals TMDLs Stakeholder
Meeting
June 23, 2011**



Central Region Public Health Center and Southeast Family Resource Center Locations

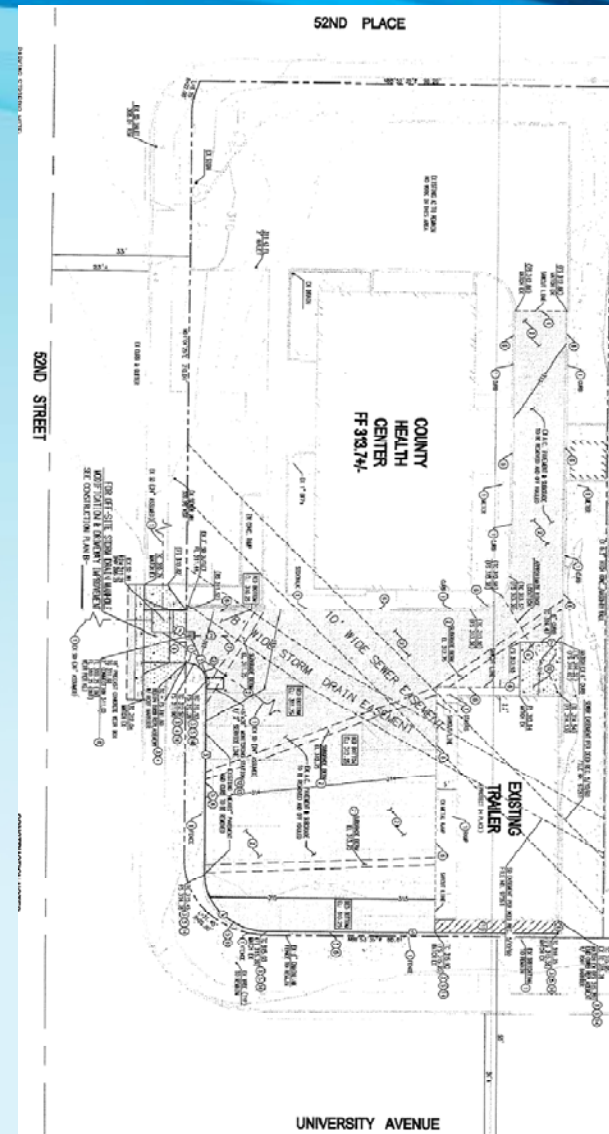
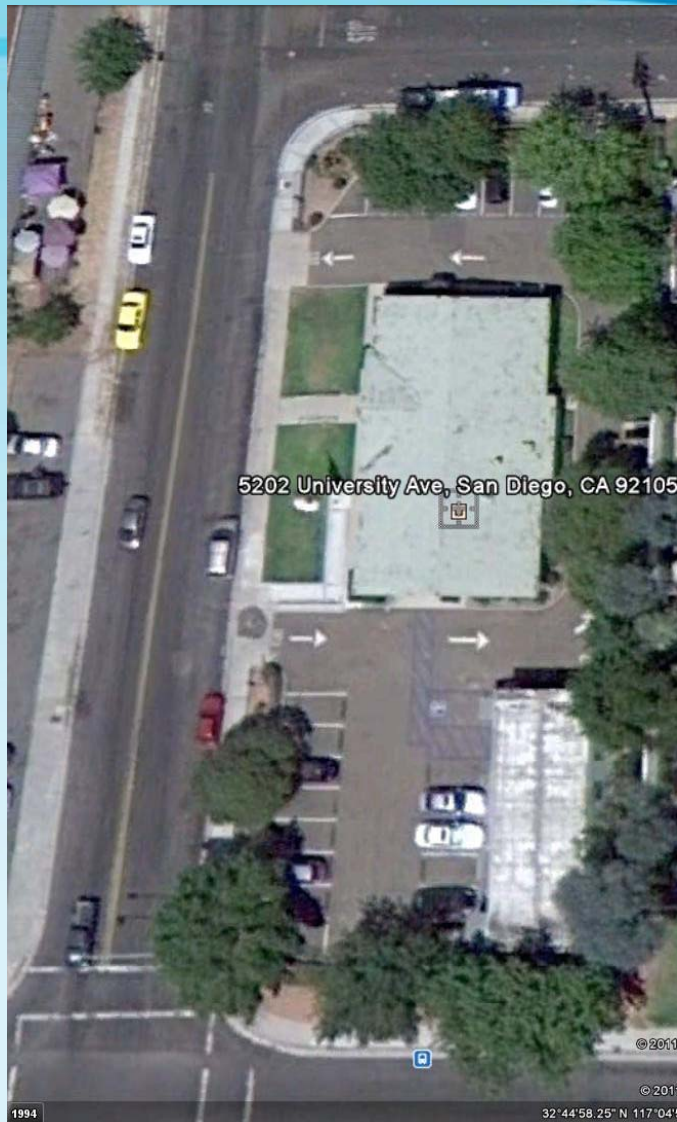


Project Overview

- **Demonstrate use of LID for TMDL compliance.**
- **Retrofit LID measures into existing development.**
- **Gain experience with rubberized porous pavement mix.**
- **Gain experience with bio-filter design and soil media.**
- **Monitor to assess effectiveness of porous pavement and biofiltration.**



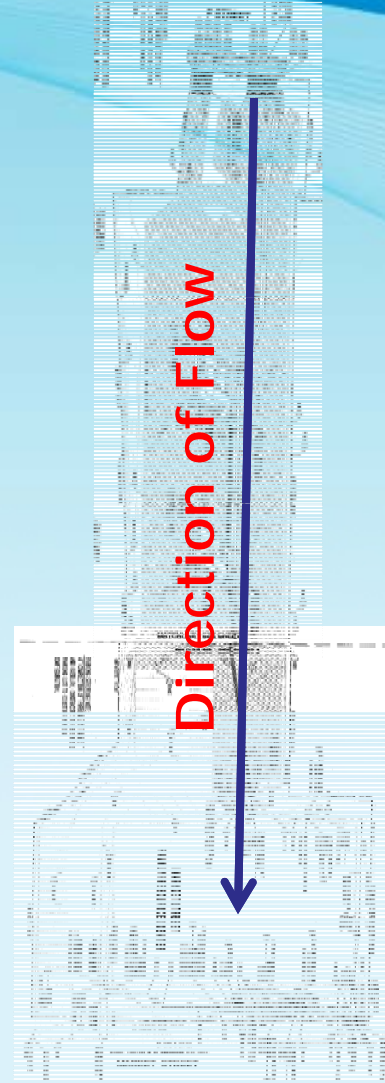
Central Regional Public Health Center



Porous Pavement Construction



Southeast Family Resource Center



Bio-filtration Planter Construction



Bio-filtration Planters

Planter 3



Planter 4



Overcoming Bio-Filter Operational Challenges



- **Experienced capacity problem in planters 1 & 2**
 - Improved capacity by regrading to improve surface storage
 - Demonstrated that visual monitoring during storms is important



Overcoming Bio-Filter Operational Challenges



- **Experienced very slow infiltration through soil matrix in planter 3**
 - Found clotting within planter mix
 - Possibly related to discharge of oil after slurry coating of parking lot
 - Probing planter helped flow
 - Portion of soil matrix excavated and replaced
 - Will continue to monitor



Lessons Learned

Lessons

- Retrofitting BMPs into existing development is difficult.
- As-built plans need to be kept up-to-date.
- Infiltration and bio-filtration can be difficult to implement.
- Good bio-filtration soil media is hard to find in San Diego.
- Contractors need more education on LID BMPs.

Responses

- Educate Regional Board about difficulties.
- Amend as-builts to show changes.
- Target use of BMPs to fit sites.
- Adopt a regional bio-filtration soil media formula.
- Continually educate contractors.



Preliminary Results

Porous Pavement

- Porous Pavement with stone reservoir works.
- Rainfall events less than 1" retained and infiltrated.
- Except for prolonged December event, 89% of rainfall was captured and infiltrated.

Biofiltration

- Biofiltration can help comply with the Metals TMDLs.
- Substantial reductions in the concentrations of dissolved copper, lead, and zinc
- No exceedance of zinc standards and only one lead exceedance
- Most exceedances were for copper and were primarily related to bypass.
- The planters increased the hardness of discharges, which reduces the toxicity of metals.



Contact Information

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